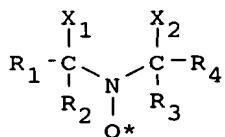


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**Amendments to the Claims:**

**Listing of Claims:**

1. (Previously Presented) In a process for the production and purification of unsaturated monomers employing distillation means and a nitroxyl-containing polymerization inhibitor of said monomers, wherein a process stream containing the nitroxyl-containing inhibitor is removed downstream of the distillation means and returned to the process ahead of the distillation means, the improvement which comprises recycling said stream containing the nitroxyl-containing inhibitor into the distillation means, wherein the temperature in the distillation means is no higher than about 110° C and the pressure is less than 760 mm Hg.
  
2. (Original) The process of claim 1 wherein the nitroxyl-containing inhibitor is of the following structural formula:



wherein

$R_1$  and  $R_4$  are independently selected from the group consisting of hydrogen, alkyl, and heteroatom-substituted alkyl;

$R_2$  and  $R_3$  are independently selected from the group consisting of alkyl and heteroatom-substituted alkyl; and

$X_1$  and  $X_2$

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(1) are independently selected from the group consisting of halogen, cyano, amido, -S-C<sub>6</sub>H<sub>5</sub>, carbonyl, alkenyl, alkyl of 1 to 15 carbon atoms, COOR<sub>7</sub>, -S-COR<sub>7</sub>, and -OCOR<sub>7</sub>, wherein R<sub>7</sub> is alkyl or aryl, or

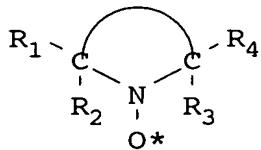
(2) taken together, form a ring structure with the nitrogen.

3 - 8 (Canceled)

9. (Previously Presented) The process of claim 1 wherein the distillation is a continuous operation.

10 - 16 (Canceled)

17. (Original) The process of claim 2 wherein the nitroxyl-containing inhibitor is of the structure



wherein R<sub>1</sub> and R<sub>4</sub> are independently selected from the group consisting of hydrogen, alkyl, and heteroatom-substituted alkyl and R<sub>2</sub> and R<sub>3</sub> are independently selected from the group consisting of alkyl and heteroatom-substituted alkyl, and the



portion represents the atoms necessary to form a five-, six-, or seven-membered heterocyclic ring.

18. (Original) The process of claim 2 wherein the inhibitor is a blend of two nitroxyls.

19. (Original) The process of claim 17 wherein the inhibitor contains one or more nitroxyls selected from the group consisting of:

*N,N-di-tert-butyl*nitroxide;

*N,N-di-tert-amyl*nitroxide;

*N-tert-butyl-2-methyl-1-phenyl-propyl*nitroxide;

*N-tert-butyl-1-diethylphosphono-2,2-dimethylpropyl*nitroxide;

2,2,6,6-tetramethyl-piperidinyloxy;

4-amino-2,2,6,6-tetramethyl-piperidinyloxy;

4-hydroxy-2,2,6,6-tetramethyl-piperidinyloxy;

4-oxo-2,2,6,6-tetramethyl-piperidinyloxy;

4-dimethylamino-2,2,6,6-tetramethyl-piperidinyloxy;

4-ethanoyloxy-2,2,6,6-tetramethyl-piperidinyloxy;

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2,2,5,5-tetramethylpyrrolidinyloxy;  
3-amino-2,2,5,5-tetramethylpyrrolidinyloxy;  
2,2,4,4-tetramethyl-1-oxa-3-azacyclopentyl-3-oxy;  
2,2,4,4-tetramethyl-1-oxa-3-pyrrolinyl-1-oxy-3-carboxylic acid;  
2,2,3,3,5,5,6,6-octamethyl-1,4-diazacyclohexyl-1,4-dioxy;  
4-bromo-2,2,6,6-tetramethyl-piperidinyloxy;  
4-chloro-2,2,6,6-tetramethyl-piperidinyloxy;  
4-iodo-2,2,6,6-tetramethyl-piperidinyloxy;  
4-fluoro-2,2,6,6-tetramethyl-piperidinyloxy;  
4-cyano-2,2,6,6-tetramethyl-piperidinyloxy;  
4-carboxy-2,2,6,6-tetramethyl-piperidinyloxy;  
4-carbomethoxy-2,2,6,6-tetramethyl-piperidinyloxy;  
4-carbethoxy-2,2,6,6-tetramethyl-piperidinyloxy;  
4-cyano-4-hydroxy-2,2,6,6-tetramethyl-piperidinyloxy;  
4-methyl-2,2,6,6-tetramethyl-piperidinyloxy;  
4-carbethoxy-4-hydroxy-2,2,6,6-tetramethyl-piperidinyloxy;  
4-hydroxy-4-(1-hydroxypropyl)-2,2,6,6-tetramethyl-piperidinyloxy;  
4-methyl-2,2,6,6-tetramethyl-1,2,5,6-tetrahydropyridine -1-oxyl;  
4-carboxy-2,2,6,6-tetramethyl-1,2,5,6-tetrahydropyridine -1-oxyl;  
4-carbomethoxy-2,2,6,6-tetramethyl-1,2,5,6-tetrahydropyridine -1-oxyl;  
4-carbethoxy-2,2,6,6-tetramethyl-1,2,5,6-tetrahydropyridine -1-oxyl;  
4-amino-2,2,6,6-tetramethyl-1,2,5,6-tetrahydropyridine -1-oxyl;

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4-amido-2,2,6,6-tetramethyl-1,2,5,6-tetrahydropyridine -1-oxyl;  
3,4-diketo-2,2,5,5-tetramethylpyrrolidinyloxy;  
3-keto-4-oximino-2,2,5,5-tetramethylpyrrolidinyloxy;  
3-keto-4-benzylidine-2,2,5,5-tetramethylpyrrolidinyloxy;  
3-keto-4,4-dibromo-2,2,5,5-tetramethylpyrrolidinyloxy;  
2,2,3,3,5,5-hexamethylpyrrolidinyloxy;  
3-carboximido-2,2,5,5-tetramethylpyrrolidinyloxy;  
3-oximino-2,2,5,5-tetramethylpyrrolidinyloxy;  
3-hydroxy-2,2,5,5-tetramethylpyrrolidinyloxy;  
3-cyano-3-hydroxy-2,2,5,5-tetramethylpyrrolidinyloxy;  
3-carbomethoxy-3-hydroxy-2,2,5,5-tetramethylpyrrolidinyloxy;  
3-carbethoxy-3-hydroxy-2,2,5,5-tetramethylpyrrolidinyloxy;  
2,2,5,5-tetramethyl-3-carboxamido-2,5-dihydropyrrole-1-oxyl;  
2,2,5,5-tetramethyl-3-amino-2,5-dihydropyrrole-1-oxyl;  
2,2,5,5-tetramethyl-3-carbethoxy-2,5-dihydropyrrole-1-oxyl;  
2,2,5,5-tetramethyl-3-cyano-2,5-dihydropyrrole-1-oxyl;  
bis(1-oxyl-2,2,6,6-tetramethylpiperidin-4-yl)succinate;  
bis(1-oxyl-2,2,6,6-tetramethylpiperidin-4-yl)adipate;  
bis(1-oxyl-2,2,6,6-tetramethylpiperidin-4-yl)sebacate;  
bis(1-oxyl-2,2,6,6-tetramethylpiperidin-4-yl)n-butylmalonate;  
bis(1-oxyl-2,2,6,6-tetramethylpiperidin-4-yl)phthalate;  
bis(1-oxyl-2,2,6,6-tetramethylpiperidin-4-yl)isophthalate;

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bis(1-oxyl-2,2,6,6-tetramethylpiperidin-4-yl)terephthalate;  
bis(1-oxyl-2,2,6,6-tetramethylpiperidin-4-yl)hexahydroterephthalate;  
N,N'-bis(1-oxyl-2,2,6,6-tetramethylpiperidin-4-yl)adipamide;  
N-(1-oxyl-2,2,6,6-tetramethylpiperidin-4-yl)-caprolactam;  
N-(1-oxyl-2,2,6,6-tetramethylpiperidin-4-yl)-dodecylsuccinimide;  
2,4,6-tris-[N-butyl-N-(1-oxyl-2,2,6,6-tetramethylpiperidin-4-yl)]-s-triazine; and  
4,4'-ethylenebis(1-oxyl-2,2,6,6-tetramethylpiperazin-3-one).